

IN THE CLAIMS

The listing of the claims will replace all prior versions, and listings, of the claims in the application:

Claim 1 (Currently Amended) An evaporator comprising:
a container in which a cooling medium is applied; and
a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling medium by heat exchange between the cooling medium and the fluid to be cooled[[:]],
wherein a total cross-sectional area of the heat exchanger tubes at a given location in a downstream section of the flow passage is smaller than a total cross-sectional area of the heat exchanger tubes in an upstream section of the flow passage at said given location.

Claim 2 (Currently Amended) An evaporator ~~according to claim 1~~, comprising:
a container in which a cooling medium is applied; and
a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling medium by heat exchange between the cooling medium and the fluid to be cooled,
wherein a total cross-sectional area of the heat exchanger tubes in a downstream section of the flow passage is smaller than a total cross-sectional area of the heat exchanger tubes in an upstream section of the flow passage, ~~wherein~~ the plurality of heat exchanger tubes have a common diameter, the flow passage comprises the downstream section and the upstream section, and the number of the heat exchanger tubes belonging to the upstream section is larger than the number of the heat exchanger tubes belonging to the downstream section.

Claim 3 (Currently Amended) An evaporator ~~according to claim 1~~, comprising:
a container in which a cooling medium is applied; and
a plurality of heat exchanger tubes arranged in the container in a bundled manner to
form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling
medium by heat exchange between the cooling medium and the fluid to be cooled,
wherein a total cross-sectional area of the heat exchanger tubes in a downstream
section of the flow passage is smaller than a total cross-sectional area of the heat exchanger
tubes in an upstream section of the flow passage, ~~wherein~~ the heat exchanger tubes are
arranged horizontally, and the position of uppermost heat exchanger tubes in the upstream
section is higher than the position of uppermost heat exchanger tubes in the downstream
section.

Claim 4 (Currently Amended) An evaporator comprising:
a container in which a cooling medium is applied; and
a plurality of heat exchanger tubes arranged in the container in a bundled manner to
form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling
medium by heat exchange between the cooling medium and the fluid to be cooled[[]],
wherein the heat exchanger tubes in a downstream section of the flow passage at a
given location are spaced from each other by a first gap, and the heat exchanger tubes in an
upstream section of the flow passage at said given location are spaced from each other by a
second gap being larger than the first gap.

Claim 5 (Currently Amended) An evaporator ~~according to claim 4~~, comprising:
a container in which a cooling medium is applied; and

a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling medium by heat exchange between the cooling medium and the fluid to be cooled,

wherein the heat exchanger tubes in a downstream section of the flow passage are spaced from each other by a first gap, the heat exchanger tubes in an upstream section of the flow passage are spaced from each other by a second gap being larger than the first gap, and
~~wherein~~ the plurality of heat exchanger tubes has a common diameter.

Claim 6 (Currently Amended) An evaporator ~~according to claim 1,~~ comprising:

a container in which a cooling medium is applied; and

a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling medium by heat exchange between the cooling medium and the fluid to be cooled,

wherein the heat exchanger tubes in a downstream section of the flow passage are spaced from each other by a first gap, the heat exchanger tubes in an upstream section of the flow passage are spaced from each other by a second gap being larger than the first gap,
~~wherein~~ the heat exchanger tubes are arranged horizontally, and the position of uppermost heat exchanger tubes in the upstream section is higher than the position of uppermost heat exchanger tubes in the downstream section.

Claim 7 (Currently Amended) A refrigerator comprising:

an evaporator ~~according to claim 1;~~ comprising:

a container in which a cooling medium is applied; and

a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling

medium by heat exchange between the cooling medium and the fluid to be cooled, wherein a total cross-sectional area of the heat exchanger tubes in a downstream section of the flow passage is smaller than a total cross-sectional area of the heat exchanger tubes in an upstream section of the flow passage;

a compressor which compresses a vaporized cooling medium;

a condenser which condenses and liquefies a compressed cooling medium in a vaporized state; and

an expansion valve which reduces a pressure of the cooling medium during a process of flowing a liquefied cooling medium to the evaporator.

Claim 8 (Currently Amended) A refrigerator comprising:

an evaporator ~~according to claim 4;~~ comprising:

a container in which a cooling medium is applied; and

a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling medium by heat exchange between the cooling medium and the fluid to be cooled, wherein the heat exchanger tubes in a downstream section of the flow passage are spaced from each other by a first gap, and the heat exchanger tubes in an upstream section of the flow passage are spaced from each other by a second gap being larger than the first gap;

a compressor which compresses a vaporized cooling medium;

a condenser which condenses and liquefies a compressed cooling medium in a vaporized state; and

an expansion valve which reduces a pressure of the cooling medium during a process of flowing a liquefied cooling medium to the evaporator.

Claim 9 (New) An evaporator comprising:

a container in which a cooling medium is applied; and

a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling medium by heat exchange between the cooling medium and the fluid to be cooled,

wherein a total cross-sectional area of the heat exchanger tubes at a given location is always smaller than a total cross-sectional area of the heat exchanger tubes in a location upstream of said given location of the flow passage.

Claim 10 (New) An evaporator comprising:

a container in which a cooling medium is applied; and

a plurality of heat exchanger tubes arranged in the container in a bundled manner to form a flow passage through which a fluid to be cooled flows so as to evaporate the cooling medium by heat exchange between the cooling medium and the fluid to be cooled,

wherein the heat exchanger tubes in a given location of the flow passage are spaced from each other by a first gap, and the heat exchanger tubes in a location upstream of said given location of the flow passage are always spaced from each other by a second gap larger than the first gap.